



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,258	09/30/2002	James Richard Williams	839-1318	5664

30024 7590 05/03/2004
NIXON & VANDERHYE P.C./G.E.
1100 N. GLEBE RD.
SUITE 800
ARLINGTON, VA 22201

EXAMINER

LEE, SHUN K

ART UNIT	PAPER NUMBER
----------	--------------

2878

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

46

Office Action Summary	Application No. 10/065,258	Applicant(s) WILLIAMS, JAMES RICHARD	
	Examiner Shun Lee	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to...
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some * c) ☐ None of:
 - 1. ☐ Certified copies of the priority documents have been received.
 - 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "72" has been used to designate both photo-multiplier tube and axially extending radial springs. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because "12 A" in line 1 should probably be --A--. Correction is required. See MPEP § 608.01(b).
3. The use of the trademarks Teflon, Kapton, and Sylgard has been noted in this application. It should be capitalized (e.g., KAPTON) wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2878

5. Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by McKay *et al.* (US 3,240,937).

In regard to claim 1, McKay *et al.* disclose (Figs 1 and 1a) a scintillation detector comprising a substantially cylindrical crystal element (27) mounted in a substantially cylindrical housing (31), one end of said housing (31) adapted for coupling with a photo-multiplier tube (28), said substantially cylindrical crystal element (27) wrapped about a circumferential surface thereof with a gadolinium (column 6, lines 51-54) foil (32).

In regard to claim 3 which is dependent on claim 1, McKay *et al.* also disclose (Figs 1 and 1a) that a gadolinium disc (32) covers a rear face of said crystal element (27).

In regard to claim 4 which is dependent on claim 1, McKay *et al.* also disclose that said crystal element (27) is comprised of sodium iodide (column 3, line 70 to column 4, line 1).

In regard to claim 5 which is dependent on claim 1, McKay *et al.* also disclose (Figs 1 and 1a) that including a photo-multiplier tube (28) affixed to a forward end of said crystal element (27).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 6-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKay *et al.* (US 3,240,937) in view of Frederick *et al.* (US 5,962,855).

In regard to claim 2 which is dependent on claim 1, while McKay *et al.* also disclose (Figs 1 and 1a) that the crystal element (28) is surrounded by gadolinium (32) except the upper surface (which is shown as open) adjacent to the photo-multiplier tube (28), the detector of McKay *et al.* lacks that the crystal element is formed with a conical forward portion. Frederick *et al.* teach (Figs. 14 and 15) to form a crystal element (514) with a conical forward portion, in order to provide a void space (522) which minimizes (column 16, line 59 to column 17, line 4) heat transfer between the crystal element (514) and the photo-multiplier tube (116). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to form the crystal element in the detector of McKay *et al.* with a conical forward portion, in order to obtain a void space which minimizes heat transfer between the crystal element and the photo-multiplier tube as taught by Frederick *et al.*

In regard to claim 6, McKay *et al.* is applied as in claims 1, 4, and 5 above. The detector of McKay *et al.* lacks that the gadolinium foil is within a stainless steel sleeve. Frederick *et al.* teach (Figs. 9 and 10) to provide a radial and axial support assembly (301) comprising a radially inner sleeve (314) comprised of a polyamide (column 11, lines 14-25), a grease layer (316), and a radially outer sleeve (318) comprised of stainless steel (column 11, lines 26-38), in order to minimize noise due to shock and vibration (column 4, lines 13-24). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the gadolinium foil in

Art Unit: 2878

the detector of McKay *et al.* within a stainless steel sleeve as part of a radial and axial support assembly, in order to minimize noise due to shock and vibration as taught by Frederick *et al.*

In regard to claim 7 which is dependent on claim 6, the detector of McKay *et al.* lacks that said crystal element is wrapped with a reflective tape, and said gadolinium foil is radially between said reflective tape and said stainless steel sleeve. Frederick *et al.* teach (column 8, lines 14-18) to provide a reflective tape, in order to enhance light transmission into the photo-multiplier tube. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to wrap the crystal element in the detector of McKay *et al.* with a reflective tape, in order to enhance light transmission into the photo-multiplier tube as taught by Frederick *et al.*

In regard to claim 8 which is dependent on claim 7, Frederick *et al.* is applied as in claim 2 above.

In regard to claim 9, McKay *et al.* in view of Frederick *et al.* is applied as in claim 6 above.

In regard to claim 10 which is dependent on claim 9, McKay *et al.* is applied as in claim 5 above.

In regard to claim 11 which is dependent on claim 10, McKay *et al.* is applied as in claim 3 above.

In regard to claim 12 which is dependent on claim 9, Frederick *et al.* is applied as in claim 2 above.

In regard to claim **13** which is dependent on claim 9, Frederick *et al.* is applied as in claim 6 above.

In regard to claim **14** which is dependent on claim 13, Frederick *et al.* is applied as in claim 6 above.

In regard to claim **15** which is dependent on claim 14, Frederick *et al.* is applied as in claim 6 above.

In regard to claims **16**, **17**, and **19**, which are dependent on claim 14, the detector of McKay *et al.* lacks that an aluminum collar is fixed to an underside of said radially outer sleeve at one end thereof, and wherein said gadolinium foil sleeve extends across said collar, said gadolinium foil sleeve is adhesively secured on a radially inner surface thereof to said radially inner sleeve only in an area that is aligned with said aluminum collar and a radially outer surface of said gadolinium foil is adhesively secured to said underside of said radially outer sleeve. Frederick *et al.* teach (column 10, line 45 to column 11, line 39) to provide a radial and axial support assembly (301) comprising a 0.0015 inch thick aluminum layer bonded to a 0.0015 inch thick stainless steel radially outer sleeve (318) which is bonded along less than one third of the length of a 0.001 inch thick polyamide radially inner sleeve (314) thus obtaining a 0.001 inch grease layer (316) along the remaining length, in order to minimize noise due to shock and vibration (column 4, lines 13-24). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to adhere the gadolinium foil in the detector of McKay *et al.* to a 0.001 inch thick polyamide radially inner sleeve and a 0.0015 inch thick aluminum spacer layer (*i.e.*, collar) bonded to a 0.0015 inch thick

stainless steel radially outer sleeve so as to obtain between the gadolinium foil and the outer sleeve a 0.001 inch grease layer in the region not occupied by the aluminum spacer layer, in order to minimize noise due to shock and vibration as taught by Frederick *et al.*

In regard to claim **18** which is dependent on claim 17, Frederick *et al.* is applied as in claim 6 above.


Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SL


CONSTANTINE HANNAHER
PRIMARY EXAMINER
GROUP ART UNIT 2878